CLAIMS

1. A power tool comprising

a motor-driven drive shaft having a longitudinal axis and having a free end;

a securing section provided on said free end of said drive shaft for engaging a receiving opening provided on said tool;

said securing section comprising six rounded tips arranged at even radial distances from said longitudinal axis, at angular intervals of 60° between each other, each pair of adjacent tips being connected by arch-shaped lateral flanks forming recesses between said tips, said lateral flanks extending from said pair of adjacent tips toward said longitudinal axis and converging in a common apex.

2. A power tool comprising

a motor-driven drive shaft having a longitudinal axis and having a free end;

a securing section provided on said free end of said drive shaft for engaging a receiving opening provided on said tool;

said securing section comprising a plurality of bulges arranged at a radial distance from said longitudinal axis, said bulges being connected by lateral flanks forming recesses between said bulges.

3. The power tool of claim 2, wherein said securing section comprises at least three bulges, each pair of adjacent bulges being continuously connected by lateral flanks extending from said pair of adjacent bulges toward said longitudinal axis and converging in a common apex.

4. The power tool of claim 3, wherein said securing section comprises at least six bulges, each pair of adjacent bulges being connected by lateral flanks extending from said pair of adjacent bulges toward said longitudinal axis and converging in a common apex.

5. The power tool of claim 3, wherein said bulges are configured as rounded tips.

6. The power tool of claim 3, wherein said lateral flanks are arch-shaped.

7. The power tool of claim 3, wherein said lateral flanks are circular arc-shaped.

8. The power tool of claim 4, wherein said bulges define a first circle having a first diameter, and wherein said apexes define a second circle having a second diameter, the ratio of said first and second diameters defining a diameter ratio, said diameter ratio being approximately 4 to 6.

9. The power tool of claim 8, wherein said diameter ratio is 4.5 to 5.5.

10. The power tool of claim 8, wherein said diameter ratio is approximately 5.1.

11. The power tool of claim 4, wherein said bulges have, in part, a circular arc shape having a certain radius, the ratio between said first diameter and said radius being approximately 30 to 46.

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12. The power tool of claim 3, further comprising a threaded blind hole arranged on said drive shaft, and further comprising a securing screw adapted for screwing into said threaded blind hole for securing a tool on said securing section.

13. The power tool of claim 12, wherein said drive shaft further comprises a retaining flange having an outer diameter being larger than an outer diameter of said securing section, thereby allowing fixation of a tool on said securing section by pressing said tool against said retaining flange when tightening said securing screw.

14. The power tool of claim 13, wherein said securing screw comprises a head allowing to secure a tool between said retaining flange and said head when tightening said screw.

15. The power tool of claim 12, further comprising a clamping flange configured detachable from said drive shaft and having a central opening for inserting a threaded portion of said securing screw therethrough, said clamping flange further comprising an annular protrusion on its side facing said drive shaft, said annular protrusion being dimensioned for pressing a tool against said retaining flange when tightening said securing screw.

16. The power tool of claim 15, wherein said clamping flange comprises a recess on its side facing said drive shaft, the recess being mated to the shape of said securing section the drive shaft for positively engaging said securing section.

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17. The power tool of claim 15, wherein said clamping flange is secured rotatably to said securing screw.

18. A tool comprising a receiving opening defining a longitudinal axis extending therethrough, said receiving opening comprising a plurality of bulges arranged at a radial distance from said longitudinal axis, said bulges being connected by lateral flanks forming recesses between said bulges.

19. The tool of claim 18, wherein said securing section comprises at least three bulges, each pair of adjacent bulges being continuously connected by lateral flanks extending from said pair of adjacent bulges toward said longitudinal axis and converging in a common apex.

20. The tool of claim 18, wherein said securing section comprises at least six bulges, each pair of adjacent bulges being connected by lateral flanks extending from said pair of adjacent bulges toward said longitudinal axis and converging in a common apex.

21. The tool of claim 20, wherein said bulges are configured as rounded tips.

22. The tool of claim 19, wherein said lateral flanks are arch-shaped.

23. The tool of claim 19, wherein said lateral flanks are circular arc-shaped.

24. The tool of claim 20, wherein said bulges define a first circle having a first diameter, and wherein said apexes define a second circle having a second diameter, the ratio of said first and second diameters defining a diameter ratio, said diameter ratio being approximately 4 to 6.

25. The tool of claim 24, wherein said diameter ratio is 4.5 to 5.5.

26. The tool of claim 24, wherein said diameter ratio is approximately 5.1.

27. The tool of claim 20, wherein said bulges have a circular arc shape having a certain radius, the ratio between said first diameter and said radius being approximately 30 to 46.

28. An adapter for securing a tool having a receiving opening to a securing section of a drive shaft of a power tool, said adapter comprising:

an adapter disk comprising a longitudinal axis and having a first side facing said power tool and a second side facing said tool;

a recess arranged on said first side, and having a certain shape for engaging said securing section of said power tool;

a raised section arranged on said second side, said raised section having a shape being different from the shape of said recess, said raised section comprising a plurality of bulges arranged at a radial distance from said longitudinal axis, said bulges being connected by lateral flanks forming recesses between said bulges.

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29. The adapter of claim 28, wherein said raised section comprises at least three bulges, each pair of adjacent bulges being continuously connected by lateral flanks extending from said pair of adjacent bulges toward said longitudinal axis and converging in a common apex.

30. The adapter of claim 28, wherein said securing section comprises at least six bulges, each pair of adjacent bulges being connected by lateral flanks extending from said pair of adjacent bulges toward said longitudinal axis and converging in a common apex.

31. The adapter of claim 29, wherein said bulges are configured as rounded tips.

32. The adapter of claim 29, wherein said lateral flanks are arch-shaped.

33. The adapter of claim 29, wherein said lateral flanks are circular arc-shaped.

34. The adapter of claim 30, wherein said bulges define a first circle having a first diameter, and wherein said apexes define a second circle having a second diameter, the ratio of said first and second diameters defining a diameter ratio, said diameter ratio being approximately 4 to 6.

35. The adapter of claim 34, wherein said diameter ratio is 4.5 to 5.5.

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36. The adapter of claim 35, wherein said diameter ratio is approximately 5.1.

37. The adapter of claim 29, wherein said bulges have a circular arc shape having a certain radius, the ratio between said first diameter and said radius being approximately 30 to 46.

38. An adapter for securing a tool having a receiving opening to a securing section of a drive shaft of a power tool, said adapter comprising:

an adapter disk comprising a longitudinal axis and having a first side facing said power tool and a second side facing said tool;

a recess arranged on said first side and having a certain shape, said recess comprising a plurality of bulges arranged at a radial distance from said longitudinal axis, said bulges being connected by lateral flanks forming recesses between said bulges; and

a raised section arranged on said second side and having a shape being different from the shape of said recess.

39. The adapter of claim 38, wherein said recess comprises at least three bulges, each pair of adjacent bulges being continuously connected by lateral flanks extending from said pair of adjacent bulges toward said longitudinal axis and converging in a common apex.

40. The adapter of claim 38, wherein said recess comprises at least six bulges, each pair of adjacent bulges being connected by lateral flanks extending from said pair of adja-

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cent bulges toward said longitudinal axis and converging in a common apex.

41. The adapter of claim 39, wherein said bulges are configured as rounded tips.

42. The adapter of claim 39, wherein said lateral flanks are arch-shaped.

43. The adapter of claim 39, wherein said lateral flanks are circular arc-shaped.

44. The adapter of claim 40, wherein said bulges define a first circle having a first diameter, and wherein said apexes define a second circle having a second diameter, the ratio of said first and second diameters defining a diameter ratio, said diameter ratio being approximately 4 to 6.

45. The adapter of claim 44, wherein said diameter ratio is 4.5 to 5.5.

46. The adapter of claim 45, wherein said diameter ratio is approximately 5.1.

47. The adapter of claim 39, wherein said bulges have, in part, a circular arc shape having a certain radius, the ratio between said first diameter and said radius being approximately 30 to 46.

48. The adapter of claim 39, further comprising a threaded blind hole arranged on said drive shaft, and further

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comprising a securing screw having a threaded portion adapted for screwing into said threaded blind hole for securing a tool on said securing section.

49. The adapter of claim 48, further comprising a clamping flange having a central opening for inserting said threaded portion of said securing screw therethrough and for srewing said threaded portion of said securing screw into said threaded blind hole, said clamping flange further comprising an annular protrusion on its side facing said drive shaft, said annular protrusion being dimensioned for pressing a tool against said drive shaft when tightening said securing screw.

50. The adapter of claim 49, wherein said clamping flange is secured rotatably to said securing screw.

51. The adapter of claim 48, further comprising a spring element arranged between said securing screw and said adapter disk.

52. The adapter of claim 48, wherein said adapter disk comprises a laterally projecting section being configured for axially supporting said tool thereon.

53. The adapter of claim 52, wherein said securing srew comprises a head being dimensioned for supporting said tool against said laterally projecting section of said adapter disk.

54. The adapter of claim 48, wherein said securing srew comprises a head being dimensioned for supporting said tool against said drive shaft.

55. An adapter for securing a tool having a receiving opening to a securing section of a drive shaft of a power tool, said adapter comprising:

an adapter disk comprising a longitudinal axis and having a first side facing said power tool and a second side facing said tool;

a recess arranged on said first side and having a certain shape, said recess comprising a plurality of bulges arranged at a radial distance from said longitudinal axis, said bulges being connected by lateral flanks forming recesses between said bulges; and

a raised section arranged on said second side and having a shape being substantially identical to the shape of said recess, but being angularly displaced with respect thereto.

56. The adapter of claim 55, wherein said recess comprises six bulges, each pair of adjacent bulges being continuously connected by lateral flanks extending from said pair of adjacent bulges toward said longitudinal axis and converging in a common apex, and wherein said raised section is angularly displaced by 30° with respect to said recess.

57. The adapter of claim 56, wherein said bulges are configured as rounded tips.